

COAL

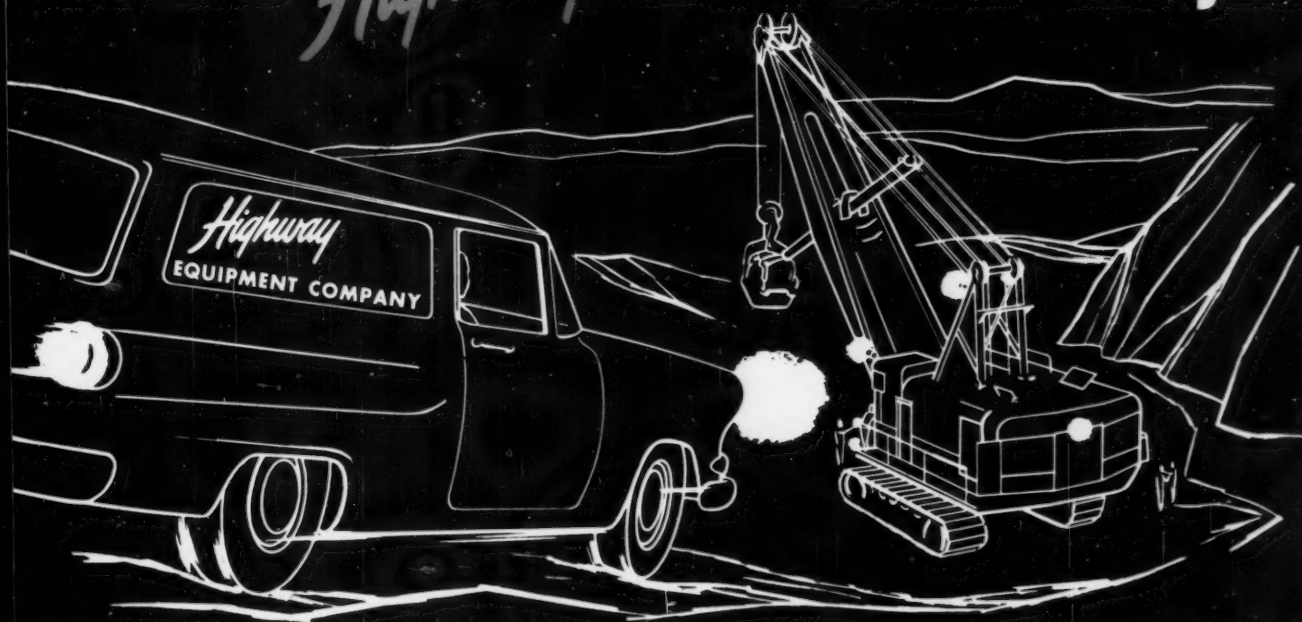
UNIVERSITY MICROFILMS
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ANN ARBOR, MICH

Mining

September, 1960

Volume 37, No. 9

it's 2:45 a.m.
but the *Highway* crew is on the job



The country sleeps. But the Highway service truck is on the road.

Regular Highway service hours at Pittsburgh, Du Bois, Erie are 8 a.m. to 3 a.m. But, in emergencies, Highway works 'round-the-clock.

Fast service is expertly and economically handled by 87 factory trained mechanics. 32 service truck crews make repairs right on your job.

These are reasons it pays you to rely on Highway for all your equipment needs.

A-2612A

Highway



HIGHWAY EQUIPMENT COMPANY

6465 Hamilton Ave. • Pittsburgh 6, Pa.

40 Hoover Ave. • Du Bois, Pa.

5245 Peach St. • Erie, Pa.



This No. 12 Motor Grader smooths the way for mine output of 3,000 tons per day

Proper haul road maintenance is a basic requirement. If equipment can't get in and out easily and quickly a mine can't operate at maximum efficiency. Logical solution . . . a motor grader that does the job correctly with minimum operating cost. For example, the Cat No. 12 Motor Grader shown above is working at Island Creek Coal Company's mine at Coal Mountain, West Virginia. In an eight-hour day it covers five miles of road. In addition, this No. 12 maintains roads for two other mines in the area . . . occasionally dresses a company airport runway.

Says Maintenance Superintendent Ernest Carey, "The conditions under which the No. 12 works are rugged. A piece of equipment has to be tough to take it, and this machine fills the bill."

Now the No. 12E is even harder than ever. The most notable improvement is the new compact engine which provides greater lugging ability in tough going, longer life and easier servicing. Horsepower remains the same . . . 115 . . . but this new engine now develops higher torque and gives the No. 12 greater load-handling capacity. Besides a new compact engine, the No. 12 Motor Grader now has the dry-type air cleaner as standard. Removing 99.8% of all dirt from intake air, this air cleaner can be serviced in five minutes . . . cuts maintenance time by as much as 70%, and substantially reduces costs, extends engine life.

Still retained are the many important features that have made the No. 12 the leader in its class. There's the oil clutch, providing up to 2,000 hours without adjustment . . . the equivalent of 12 months of operation. Ample clearance between the top edge of the blade and bottom edge of the circle provides greater rolling action . . . allows more material to move across the blade. Improved mechanical controls reduce kickback . . . make engagement easier. Blade controls have a mechanical lock. When control is in neutral, the power shaft is locked by a set of gear teeth to prevent creeping.

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OLD TOWN ROAD, CLEARFIELD, PENNSYLVANIA
1356 EAST 12TH STREET, ERIE, PENNSYLVANIA
ROUTE 219 NORTH, SOMERSET, PENNSYLVANIA
BUCKHANNON PIKE, CLARKSBURG, WEST VIRGINIA

COAL MINING

Vol. XXXVII September, 1960 No. 9

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Creek
Coal
speeds
stripping
with**

DAVEY

**Rotary
Drills**



Like other leading mine operators, Harmon Creek Coal Corporation, Burgettstown, Pa., speeds drilling and cuts costs with Davey Rotary Drills.

Daveys can be mounted on any make of truck . . . move fast between blast holes . . . are easy to set in position . . . ideal for low cost drilling. Offered in 8 truck-mounted models with capacities to 3,500 ft. Tractor-mounted drills also available.

A-298A

Write for Bulletin E-702S!

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DAVEY COMPRESSOR CO.
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Portable Compressors

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Air Tools



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Compressors



Rotary Drills



**BECKWITH CAN REBUILD
YOUR CAT DIESEL ENGINE
WITHIN**

48 to 72 DOWNTIME-HOURS *

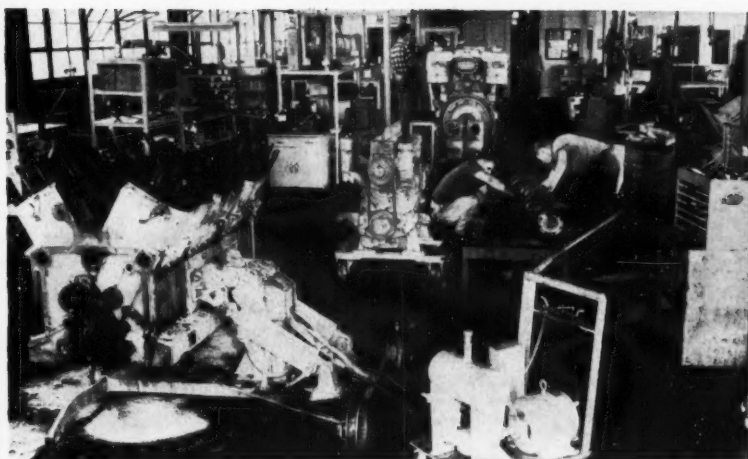
**BECKWITH WILL GIVE YOU A
FIRM PACKAGE PRICE
. . . BEFORE REPAIRS START!**

* DOWNTIME-HOURS MEAN TOTAL ELAPSED TIME
FOR REBUILDING YOUR ENGINE ON OUR
SYNCHRO-DYNE ASSEMBLY LINE.



**SEND
ORDER
TO-DAY**

Can You Afford to Rebuild Your Engine Yourself?



HERE ARE TYPICAL REBUILD PRICES FOR THE MOST POPULAR CAT ENGINES

D311 . . . (D2, #212 MOTOR GRADER, 933, 11A) . . .	\$ 995
D313 . . . (D4, #112 MOTOR GRADER, 995, 12A) . . .	1,395
D318 . . . (D6, #12 MOTOR GRADER, 977, 20A) . . .	1,650
D337 . . . (DW21)	2,550
D339 . . . (D88000, D7 - 3T, 17A)	1,995
D342 . . . (D13000, D8 - 1H, 2U, 13A, 14A 15A) . . .	2,350
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PRICE IS FOR COMPLETELY RECONDITIONING THE ENGINE, FAN TO FLYWHEEL, EXCEPT THE DIESEL ENGINE BLOCK. F.O.B. NEAREST BECKWITH MACHINERY COMPANY SERVICE CENTER, WITH A NEW ENGINE GUARANTEE OF 6 MONTHS.

THESE PRICES ARE SUBJECT TO REVISION WITHOUT NOTICE.

Every hour your engine is down . . . you are losing production and profits. Every day that goes by in repairing or rebuilding your power source . . . your costs of operation go up.

Can you afford the down-time and additional costs of rebuilding your Caterpillar diesel engine yourself when Beckwith is now able to do the job in *hours*? Another advantage of turning over your Cat engine rebuilding to our factory-trained specialists is that you know, before a nut is turned, exactly what the finished job will cost. Firm prices are quoted on each engine model.

We will also make arrangements for a specially equipped truck to help you remove your power unit at slight additional cost, if you wish, and speed it to our Engine Rebuilding Center. Speedy removal, transportation, rebuilding and installation of the rebuilt engine have all been planned to give unequalled service.

If your needs are critical, we may be able to improve on our time schedule of 48 to 72 Downtime-Hours* from pick-up to reinstallation. You'll like our prices, too. Fill out the coupon at left and we'll give you a call immediately. Or . . . pick up the phone and contact your nearest Beckwith Service Manager for more information.

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PITTSBURGH 6, PA.

JOHN, THIS SOUNDS GREAT! SEND MORE INFORMATION

PHONE IMMEDIATELY

WE HAVE A CATERPILLAR D _____ ENGINE, SERIAL _____ IN A _____

HOW FAST CAN YOU SCHEDULE US FOR REBUILDING?

WHAT IS YOUR PACKAGE PRICE?

NAME: _____ TITLE _____

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Do You Know?

● The United States will spend 15 billion dollars or more on research and development in 1962, if present trends continue.

The analysts, most of them connected with stock brokerages, project the 1962 expenditures from present expenditures, including statistics just released by National Science Foundation on research and development in 1958.

They speculate that the research will begin to have a major impact on business in the mid-1960's.

Their predictions are based on these statistics:

1. Research and development is increasing at a fast clip. Money spent on these purposes by both government and private industry was less than two billion dollars in 1945, the peak war year. In 1953, a little more than five billion was spent. Estimates of 1959 expenditures set these at about \$12.4 billion.

2. Government funds for basic research alone represented 23% of all research expenditures in 1956. In fiscal 1960, basic research has risen to about 31% of the total. In basic research, the more revolutionary discoveries are generally made.

3. The 1961 budget is shaping up so that Government expenditures for research and development will be nearly eight and a half billion dollars.

4. From past years, it can be estimated that these Government funds will be 60% of the total money spent. Thus, total expenditures should be about \$14 billion in 1961.

Government funds began increasing sharply after Korea.

The 1961 Federal budget requests for basic research total \$600,000,000 — 20% more than in fiscal 1960. This pure research may bring new knowledge that will permit new products to come to market from 1965 to 1970.

While the Government supplies the money for its research projects, about 75% of the work may be done by private firms.

For instance, according to the final breakdown by the National Science Foundation, the Federal Government financed more than four and a half billion dollars worth of industrial research and development in 1958. Much of the money went into defense projects. (The money spent was three times that spent in 1953.)

The Foundation reports that industrial research and development in 1958 accounted for three-fourths of the \$11 billion total spent in 1958.

But the Federal Government put up the funds for 56% of the industry total and perhaps about 60% of the total used by industry, universities and other groups, including those of the Government itself.

HERE AND THERE IN THE COAL INDUSTRY



ARNOLD E. LAMM
President
The Pittsburg & Midway
Coal Mining Co.
Pittsburg, Kans.



JAMES R. WILSON
Vice-President—Sales
Harmon Creek Coal Corp.
Pittsburgh, Pa.



WALTER ROBERTSON
Vice-President—
Operations
Harmon Creek Coal Corp.
Pittsburgh, Pa.

● The Board of Directors of The Pittsburg & Midway Coal Mining Co., a subsidiary of Spencer Chemical Company of Kansas City, announced the election of a new president. Arnold E. Lamm, 52, of Lancaster, Ohio, formerly president and a principal owner of the Sunnyhill Coal Company, has been named to fill the vacancy created by the resignation of Edwin R. Phelps. The new executive will report to his Pittsburg, Kan., office October 1.

Under Lamm's leadership the Sunnyhill Coal Co. in Ohio, beginning in 1946, grew to produce a million and a half tons of coal in 1959, when Peabody Coal acquired the assets of Sunnyhill. Lamm began his career in the coal industry in 1936 as a comptroller for United Electric Coal Company of Chicago. Later he was elected secretary-treasurer. While with this company, he not only established new accounting and finance procedures but also he initiated machinery modernization programs. He participated in the conception and design of new earth moving equipment essential to strip mining. Later with Sunnyhill, he helped design and is one of the principal patent holders of the Colmol—a rotary type continuous mining machine that has contributed to the efficient mechanization of deep mining.

● Harmon Creek Coal Corp. announced the appointments of James R. Wilson as vice president-sales and Walter Robertson as vice president-operations.

Headed by President James F. Hillman, Harmon Creek Coal Corp. operates the largest strip mine operation in Western Pennsylvania producing high grade steam coal for utilities and industry.

Mr. Wilson formerly was sales manager of Harmon Creek Coal Corp. which he joined in 1951. A resident of Bethel Park, he previously was associated with Consolidation Coal Co. where he spent 20 years in sales. He is a director of the Western Pennsylvania Coal Operators Assoc. the Mt. Lebanon Golf Club and the Downtown Club.

Mr. Robertson, former mine superintendent, has been with Harmon Creek Coal Corp. for 34 years. He is credited by Mr. Hillman as being responsible for the vast reclamation and reforestation program on the company properties near Burgettstown on Route 22. Under Mr. Robertson's direction, the company has gone far beyond the requirements of the Pennsylvania Strip Mine Act and reclaimed approximately 2,000 acres. Mr. Robertson is also a member of the board of Mellon Bank's Burgettstown branch office.



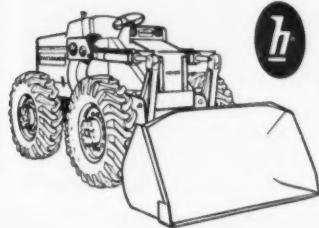
HOW TO HANDLE 4 $\frac{1}{4}$ YARDS OF COAL

Hough Model H 90 at Bowie Coal Company, Venango County, Pennsylvania. This machine is equipped with a special 4 $\frac{1}{4}$ yard bucket designed for light material.

Machine replaces a crawler type shovel that couldn't load fast enough. The company reports no coal handling problems now!

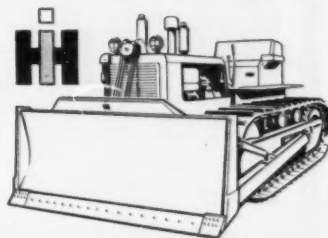
Ask for a demonstration at any State office.

NEW YORK Albany, **UNION** 9-5393 • Syracuse, **GRanite** 5-5169 • Potsdam, **Potsdam** 4158 • **VERMONT** Montpelier, **CApitol** 3-5225
PENNSYLVANIA Franklin, **IDlewood** 2-2115 • Harrisburg, **CEdar** 4-5995 • Kingston, **BUtler** 7-1108 • Philipsburg, **DIckens** 2-4480 • Pittsburgh, **WEllington** 1-4040

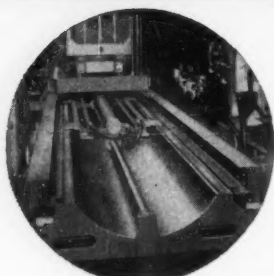


STATE
EQUIPMENT COMPANY

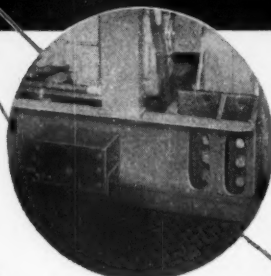
CALL STATE FOR SERVICE
 TOP VALUES IN NEW AND USED EQUIPMENT



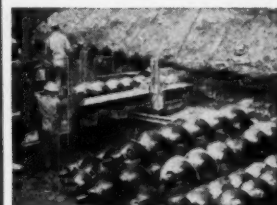
SELF-MOVING



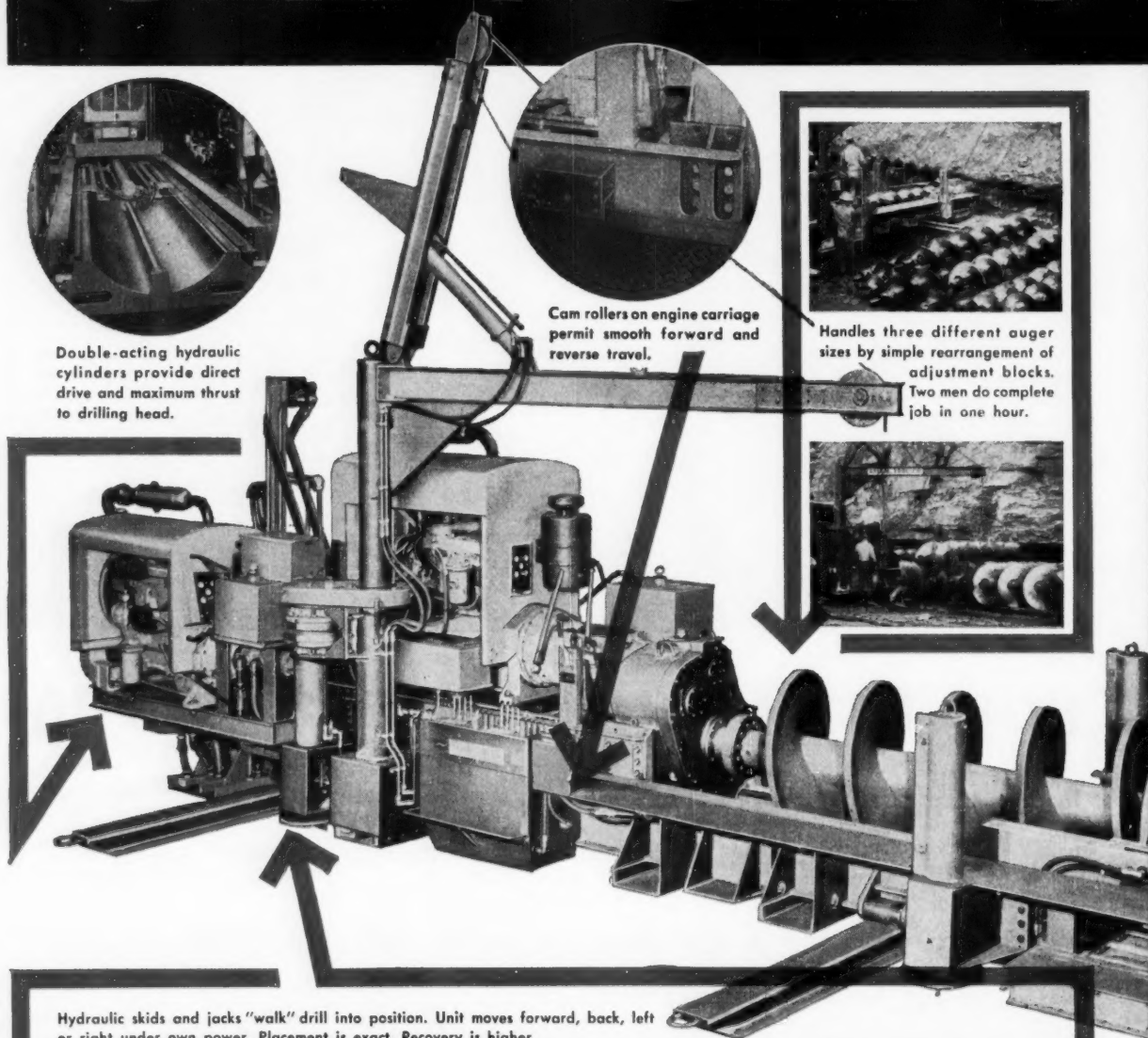
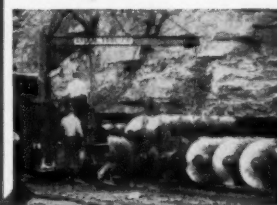
Double-acting hydraulic cylinders provide direct drive and maximum thrust to drilling head.



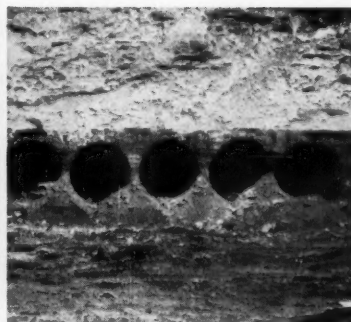
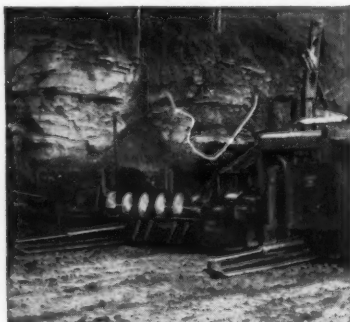
Cam rollers on engine carriage permit smooth forward and reverse travel.



Handles three different auger sizes by simple rearrangement of adjustment blocks. Two men do complete job in one hour.



Hydraulic skids and jacks "walk" drill into position. Unit moves forward, back, left or right under own power. Placement is exact. Recovery is higher.



COAL AUGER



Conveyor arrangement permits discharge to left or right. Conveyor can be turned around easily in the field. Narrow bench or restricted pit entry is no problem.

maximum recovery ... two-man crew

No matter how you mine it, 160,000 tons per year is a lot of coal... particularly if it's done with one piece of equipment and a two-man drilling crew. That's the kind of production being reported by users of Salem's big, rugged McCarthys. The only other piece of equipment on most of these jobs is ONE dozer and operator for face up and clean up.

Coal runs faster because the McCarthys move under their own power on skids and jacks... even in wet, muddy pits. Many operators keep right on drilling in ice and snow. They stop only when haulage roads become too bad for travel.

Add it up... a versatile drill; fast moves; high recovery rate; minimum equipment and lower initial investment... augered coal costs less with a McCarthy!

Ask your Salem distributor or us for complete facts. We'll send them immediately.

COWIN EQUIPMENT COMPANY, INC.
Birmingham 4, Alabama

WHITMYRE EQUIPMENT COMPANY
Bethel Park, Pa.

WILSON MACHINERY & SUPPLY CO.
Lexington, Kentucky

NIXON MACHINERY & SUPPLY CO.
Chattanooga 1, Tenn. Knoxville, Tenn. Nashville, Tenn.

RISH EQUIPMENT CO.
Bluefield, W. Va. Charleston, W. Va. Clarksburg, W. Va. Coeburn, Va.
Parkersburg, W. Va. Columbus, Ohio Youngstown 7, Ohio



The 70 cubic yard stripping shovel working at Victoria mine of the Midland Collieries. At this point the overburden runs 65 feet.

New Things Seen At Illinois Coal Strippings

● The State of Illinois has always been a leader in the use of coal stripping and allied machinery.

In the early developing stages of the industry, the State of Illinois

washed stripped coal for market, now has more washing plants than any other coal stripping state including some of the largest and most modern plants in the industry.

The first large size coal stripping shovels were employed in Illinois. The Wheeled Scraper for moving overburden off coal was developed in Illinois. The largest coal stripping shovel built to date (70 cubic yards) is operating in Central Illinois, moving 3,500 cubic yards of cover per hour, 24 hours per day.

Big coal hauling units are now being experimented with in Illinois and the State is a laboratory for operational and maintenance data of these gigantic coal hauler and the type of road required to carry them.

From the standpoint of outstanding developments in coal stripping, Illinois is still showing trends to the future of the industry. The accompanying pictures show some of the newer things in that state.



Office and shops at one of the newer operations.



This 600TPH cleaning plant was built by Roberts & Schaefer Co. for one of the new mines in a new field.



Typical haulage road, built to carry the heavy loads of large hauling units.



Caterpillar D-8 tractor with hydraulic controls pulling drainage pipe at Midland Collieries, Inc.



Latest type Caterpillar D-7 tractor pushing shot overburden of coal at one of the new strip mines.



One of the new 80-ton coal haulage units being loaded by 10 yard coal loading dipper at the Farmington mine of Midland Collieries, Inc.



Looking into a pit at the Fiatt Mine of Truax-Traer Coal Co.



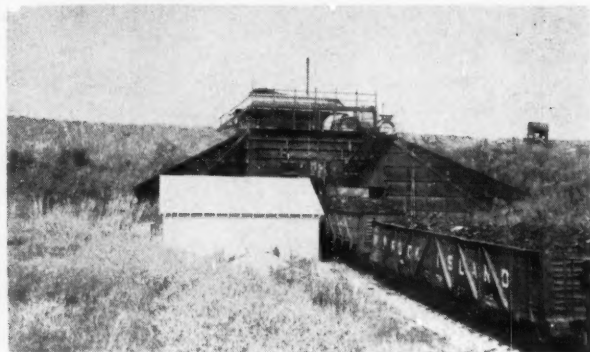
80-Ton coal haulage unit at the Farmington operation of the Midland Electric Coal Co.



Loading coal into one of the large Euclid hauling units at Fiatt Mine of Truax-Traer Coal Co.



Athey Truck leaving pit at quitting time at the Fiatt Mine of Truax Trearer Coal Co. Three 80-ton trucks of this make have been ordered.



50-Ton haulage unit dumping coal into railroad cars at the Victoria operation of Midland Collieries, Inc. The coal is washed at Atkinson, Ill.



D-9 Caterpillar Tractor backfilling at Fiatt Mine of Truax-Trearer Coal Co.



A new Caterpillar D-8 tractor backfilling spoil at the Victoria mine of the Midland Collieries, Inc.



D9 push-loads DW21-470 as pit is opened for new stripping operation on Rock Hill Mine near Thurman, Ohio.

New Rock Hill Mine Puts Scrapers To Good Use For Stripping

Tractor-scraper units are moving overburden at as fast a clip as would be possible with shovels—and at a 50% saving in equipment investment at the Swisher Coal Co.'s new Rock Hill Mine near Thurman, Ohio.

A. L. "Doc" Dressler, superintendent of the new operation, where stripping was started on April 20, first started testing wheel-type tractor-scraper use in the company's now played-out Meigs County operation in 1954. And today he's among the leading exponents of this method of overburden removal.



Cat D9 Tractor with three-tooth ripper breaks up heavy shale and rock formations for easy scraper loading, increased production.

An investment of 50% or less in earthmoving equipment made possible by purchase of tractor-scrappers, Mr. Dressler says, makes possible the movement of an equal amount of dirt and "allows you to put it where you want it." Formerly, shovel reach was a limiting factor and as Mr. Dressler points out, "with shovels, you end up with a pile of dirt that has to be leveled."

Then, too, there's the problem

of moving. With tractor-scrappers, the equipment can be driven over the roads to a new location. Large shovels, however, must be dismantled, trucked to the new location, and put together again, often with questionable bridges to cross on the way.

In addition to the added mobility, Mr. Swisher feels that scrapers make it possible to maintain better drainage in the pits. And close control of the cutting edge makes it

simple to strip right down to the face of the coal, so that it's very nearly in condition to load by the time the units move out and loading equipment moves in. Finally, the tractor-scraper units find further duty in helping to maintain the haul roads by spreading dry material on soggy spots during wet weather.

Mr. Dressler's first experience with scrapers in overburden removal in 1954 was begun when the company purchased two new and three used self-propelled machines. When they had proven themselves, he started trading in shovels on more scrapers.

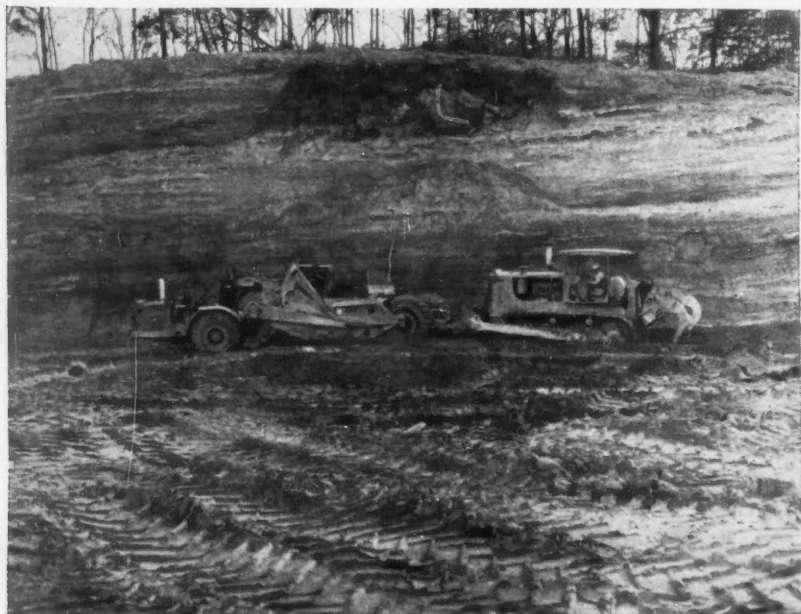
Nucleus of the equipment on the 10,000 acre lease near Thurman—which will eventually be expanded to include 30,000 acres—are nine Caterpillar DW21-470 Tractor-Scrapers, which are push-loaded by D9's. Eight Cat D9 Tractors, one with power shift transmission and two with rippers do necessary dozing, ripping and pit cleanup chores.

Preliminary stripping was begun on April 20, with the first coal hauled from the pit on May 4. Some 20,000 tons of coal had been removed by May 18. Current production of 1,000 to 1,200 tons per day will be expanded to 2,000 to 2,400 tons per day after the operation is in full swing. Calculated reserves total some 53,400,000 tons on the 10,000 acre lease.

Pits are dug an average of 100 feet in width, with an average of 45 feet of overburden covering the three-foot seam of coal. Composition of the overburden includes three inches to one foot of topsoil, 20 feet of shale, three feet of rock and below that approximately 20 feet of blue shale.

Clearing and preliminary bulldozing for new cuts is done with the D9s equipped with dozers, the ripper-equipped D9s breaking up shale, rock and blue shale formations for easier loading of the DW21-470s. No blasting is necessary in the materials encountered. Ripping saves 20c per ton over blasting costs.

(Continued on Page 17)



Cat DW21-470 Tractor-Scraper and D9 pusher are dwarfed by pit wall as pit nears level of coal seam. On average 500-foot haul, tractor-scraper units move 340 yards per hour at Swisher Coal Co.'s Rock Hill Mine.



Cat DW21-470 Tractor-Scraper spreads spoil outside pit. Use of tractor-scraper units makes spoil pile at edge of pit unnecessary, since material can be hauled to any distance.

TORTURED



**JOB
TESTED**

ABUSED



PROVED BY 7 YEARS OF TESTING... NOW
HERE THEY ARE—A FULL LINE OF CAT
WHEEL TRAXCAVATORS READY TO GO
TO WORK FOR YOU!

3 sizes OF JOB-PROVED CAT

with proved performance...

Sometime over the past few years you may have seen a nameless wheel loader working in an Indiana quarry, at a Florida sand pit, or in Colorado rock; and, after watching, you may have wondered if the operators were deliberately trying to tear them up. They were! And the abuse of these prototype Cat loaders guarantees that *your* job won't be a proving ground!

Last March the 944 Traxcavator was introduced. No machine in Caterpillar's history has met with such instant approval. Today, after many have worked hundreds of hours, here are typical owner reports: * "Tried one, bought two." "Operators love it—fastest on the market!" "Easily loads 200 tons per hour." "A whole lot safer." Frankly, it isn't surprising; besides the seven years' testing on this line, Caterpillar has 23 years' experience in track-type loader manufacturing and 20 years' know-how in wheel tractors.

*Names, addresses, job data on request.

1 1/4
YD.

922

TRAXCAVATOR FEATURES

Controls: Machine and bucket controls located for easy, natural handling. Forward-reverse lever is mounted on steering column. Bucket control levers have automatic bucket positioners for easy operation, fast cycles.

Speeds: Two work ranges, two travel ranges. Reverse speeds are 25% faster than forward speeds—this reduces cycle time.

Power: Accurately rated power—from compact, turbocharged Cat Diesel Engines, or optional



2
YD.
944

This is the loader whose performance—ease of handling—safety—convenience—power—versatility—has already made competitive wheel loaders obsolete. Big in performance, the 944 Traxcavator digs, maneuvers, reverses, raises, dumps, all on the move, in one continuous motion. See it and the complete line of Traxcavators at our headquarters!



Quick service checks are easy to make; unitized construction permits any adjustments or repairs to be done in minimum time. Features like this make job time all work time.

wheel Traxcavators

safely... easy operation

2³/₄
YD.
966

gasoline engines for the 922 and the 944. The 922 engine develops 80 HP, 944 engine develops 105 HP, 966 develops 140 HP. For comparative purposes the maximum ratings of the diesel engines are: 922—105 HP; 944—135 HP; 966—205 HP.

Convenience features: Wide, safe steps, no crawling over tires, no ladder. Uncluttered deck. Dual brakes can neutralize transmission or leave it engaged for maximum control. Designed for complete operator confidence and easy operation.

Lift: High lift with good stability and extra-long reach make truck loading faster, easier.

Now, two more wheel loaders join the Traxcavator family: the 922 and 966, giving a full range of sizes from 1¹/₄ to 2³/₄ cu. yd. Here are a few highlights:

PRODUCTION-BOOSTING DESIGN. Ample power provides continuous crowding from the wheels, constant power to the bucket—it's called *live action* • Power shift transmission provides smooth, effortless shifting, split second speed and direction changes without decelerating.

DEPENDABILITY BUILT IN. All major components Caterpillar designed and manufactured in the rugged Traxcavator tradition • One manufacturer, one dependable dealer organization is responsible for the entire Caterpillar-built unit from radiator to bucket.

SAFE, EASY TO OPERATE. All lift arms and pivot points are well in front of the operator, providing freedom of movement, safety, all-around visibility.



Fingertip shifting, all-around visibility, easy to get on and off, power steering. Dual ratio steering on 966 allows quick response turns on work cycles, smooth automotive type steering for traveling.



Choice of equipment to match your needs—including cabs, light material buckets, quarry buckets, exclusive Cat Side Dump Bucket, bucket teeth, and many special items to fit your job requirements.



Stable design, oscillating rear axle keeps all four wheels firmly on the ground even over rough terrain. High strength axles withstand severe shocks. Planetary final drives assure easy servicing.

We'll help you select the Traxcavator that suits your needs best

Specifications are important... they're the first step in selecting equipment, but they can never be the whole story. There is often a big difference in two equally *rated* machines. Some of this difference can be demonstrated with machines on your job. But for the whole story look to the dealer.

Your Caterpillar Dealer is made up of experienced people: material-handling specialists, heavy equipment experts, factory-trained mechanics... all of them are men who understand your job and the importance of keeping your job going.

Add it all up... the most desirable features, dependability, realistic terms to match your operations, and a dealer whose sole business is heavy equipment... where could you find a better place for an important machinery investment?

BRIEF SPECIFICATIONS

Description	922	944	966
Engine HP	80 (Gasoline) 80 (Diesel)	105 (Gasoline) 105 (Diesel)	140 (Diesel)
Bucket capacity, cu. yd.	1¼	2	2¾
Bucket lift, hingepin	11' 2"	12'	12' 10"
Bucket reach 7' dump, inches	40¾	50¾	57¾
Bucket width, inches	83½	93½	104½
Weight (Diesel) lb.	15,970	20,780	26,400
Speeds (MPH) Forward, work	0-6.8	0-7.0	0-6.7
Forward, travel	0-18.9	0-24.1	0-22.8
Reverse, work	0-8.7	0-8.8	0-8.4
Reverse, travel	0-20.4	0-30.0	0-28.6

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Name _____

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(Continued from Page 12)

Average loads for the scraper units are 20 to 22 yards, each machine moving approximately 340 yards per hour on the 500 foot haul. Stripping crews work 10 hours per day, five days per week and eight hours on Saturday.

A 1¼-yard Lorain L50 loads trucks for the 45-mile haul to the tipple at Pomeroy. Plans call for construction of a new tipple at Gallipolis, Ohio, 20 miles away in the near future, however.

In addition to Mr. Dressler, the mine employs 29 men.

• A ruggedly handsome, consumer styled, "super-portable" two-way radio unit said to be ideal for both industrial and recreational use and retailing for less than \$130.00 has been introduced by the Kaar Engineering Corporation, 24 years a leader in industrial and marine communications.

Smaller than a quart milk carton and equipped with a collapsible antenna, the fully transistorized new Kaar TR330 Hand-D-Phone offers simple, one-hand operation and a range of from ½ mile up to several miles, depending on terrain. The less than two-pound unit is equipped with a large speaker for loud, clear reception, an ear-phone jack for private listening, and an exclusive "squench" device which keeps the instrument silent until signals are received.

Walter Landor and Associates, prominent San Francisco-based industrial design organization, created the dramatic, highly contemporary case. Color-styled in light and dark greys, the Hand-D-Phone is perhaps the first two-way radio case designed with the consumer foremost in mind. Primary design goal was the creation of a case which would reflect the "authority image" and high efficiency of the instrument.

Although engineered small for portability, the new two-ray radio unit will support half a ton without damage. Its shape permits easy control handling and tends to discourage on-the-job theft.

Providing instant, highly de-



pendable two-way radio contact for business, emergency, personal and recreational use, the Hand-D-Phone is equally effective in pairs or as a part of a Kaar Industrial or "Citizens Band" communications system. The Hand-D-Phone re-

quires no FCC license, utilizes crystals meeting government specifications, and is powered by a choice of four battery types with an operating life ranging from 50 to 300 hours.

Protecting the Kaar Hand-D-Phone is tough epoxy-based finish which withstands a 500-hour salt spray test. (A leather carrying case is optional.)

Suggested applications include boat-to-shore and boat-to-boat communications, hunting, camping and other sport activities, use in warehouses and on docks, for surveying and inventories, and at construction sites.

The new Hand-D-Phone completes the "Citizens Band" communication system by Kaar. Other Kaar "Citizens Band" units are the Kaar "D" Phone for central station and mobile facility; and the Kaar "IMP", engineered to stand the stress of rugged industrial vehicle communications.

Kaar Engineering Corp. is located at 2995 Middlefield Road, Palo Alto, California.



The city sleeps. But, it's business as usual in the Highway parts and service departments.

Regular service hours are 8 a. m. to 3 a. m. But, for emergency work, Highway is open 'round-the-clock.

Fast service . . . expertly and economically handled by 87 factory-trained mechanics — this is just one of many reasons it pays you to rely on Highway for all your equipment needs.

A-2296A



Highway

HIGHWAY EQUIPMENT COMPANY

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40 Hoover Ave. • Du Bois, Pa.

5245 Peach St. • Erie, Pa.

Returning Stripped Land to Immediate Farming

Having agreed in advance with the land owner to return stripped land back to immediate farming, the Teramana Brothers Coal Com-

pany of Steubenville, Ohio, is doing an unusual job of land reclamation. In the stripping operation the top soil is piled for spreading

on top of backfilled land so that it can be immediately put back to farming.



Two tractors pushing spoil up to highway left in strinning operation. Highway is completely covered.



Contour and growth on reclaimed strip land.

Wise Words for Tractor Operators

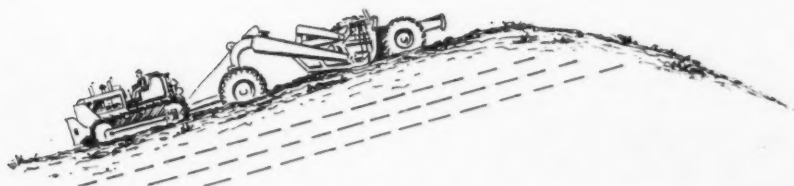


Figure 1. Make all cuts in downhill direction.

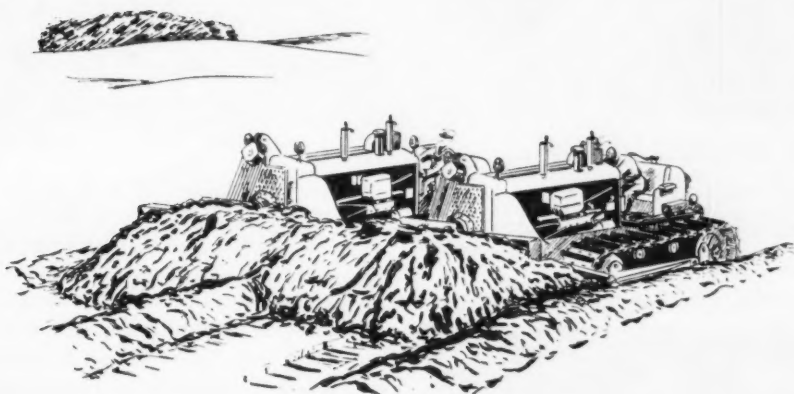


Figure 2. Slot dozing.



Powered by Caterpillar D397 Diesel engine, this Manitowoc Model 4500 dragline working at the Benjamin Coal Co., LaJose, Pa. is moving between 4500 and 5000 cubic yards of overburden per day on 3-shift operation basis.

Boosting production on earth-moving jobs can take many forms. Here are four tested methods, recommended by International Harvester Company's Construction Equipment Division.

(1)—Gravity. The sharp operator puts this to work by taking advantage of the natural lay of the land. Whenever possible, material should be dozed or loaded on the down slope. When bringing a hill down to grade, all loading scraper passes usually can be made downhill.

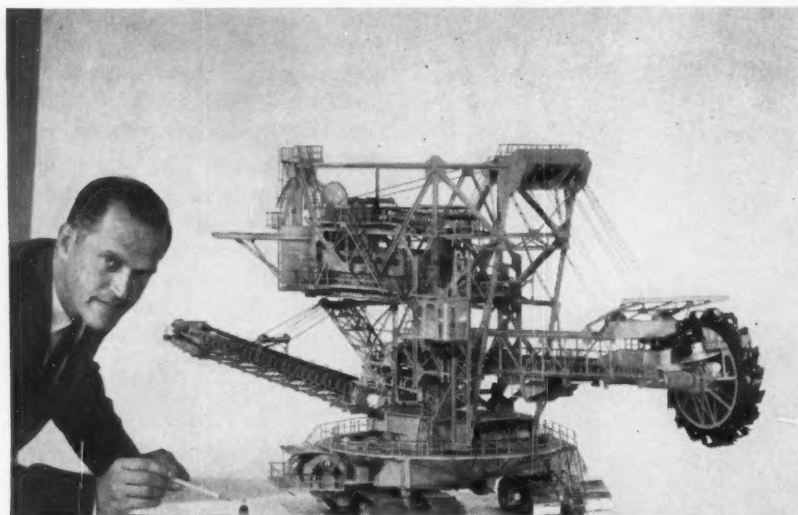
(2)—Slot Dozing. This refers to making passes in the same spot until the crawler is down to grade. This action keeps the machine in the "slot" and prevents dirt spillage at the ends of the blades. Two dozers working side by side in the slot can double production and prevent spillage between the two blades and at the ends.

(3)—Ridging. Extra yardage on a scraper job can be obtained by leaving a three-foot ridge between successive cuts. On the next pass, the ridge should be straddled, so that more dirt will be thrown into the center of the scraper. But little extra power will be needed to scoop up the thick center section, which will move easily up the loading chute and spill out in all directions.

(4)—Planned Dumping. On a fill, more material should be dumped to the outside edges to give the fill a concave cross section. The edges should be kept high, so there will be less tendency for the scraper wheels to go over the side and damage the slope. This also can be an important safety measure when dumping on high levees.

Near the close of a working day, it's usually wise to drop the last few loads in the center of the fill. This makes for a convex shape and provides a natural water runoff. Should rain fall during the night, the chances of working the fill the next morning should be promising.

- 3 compact, easy-to-handle primers for safe, economical initiation of low grade ammonium nitrates and other blasting agents are announced by Austin Powder Company, Cleveland.



This scale model of an LMG bucket wheel excavator which removes overburden at the rate of 3,900 cubic yards per hour, is one of the highlights of the Link-Belt Company display at the AMC 1960 Mining Show at Las Vegas, Nevada, October 10 through 13. Link-Belt has sales rights for this wheel for both the U.S. and Canada. The wheel is self-propelled and is produced by the West German firm of Orenstein-Koppel und Lubecker Maschinenbau AG. The bucket wheel excavator of which the above is a model, is in operation in Neyveli, India, and is used to strip loosely consolidated sandstone overburden in a brown coal mine.

Designated by color and known as Austin Red Cap, Blue Cap and Black Cap, primers are said to be unaffected by water and completely insensitive to shock and abrasion with rifle impact sensitivity of zero. As a result, holes can be loaded as soon as drilled when primers are used with detonating fuse. If incomplete detonation of a blast should occur because of improper connections, primers can be more safely dug out.



New Austin Red Cap, Black Cap and Blue Cap primers (L to R) for low grade ammonium nitrates and other blasting agents.

Made of special cast high explosive, primers have a speed of more than 22,000 fps. Red Cap and Black Cap are reputed to be equivalent to 30-lb. dynamite primers although they weigh only 13 oz. apiece and are no larger than the palm of a man's hand. They are designed for initiating a minimum of 300 lbs. of low grade ammonium nitrate in large diameter holes. The 8 oz. Blue Cap is for small diameter holes.

All 3 primers are furnished with a central channel. This permits fast threading of detonating fuse through their entire length. In deep holes, additional primers can be quickly slipped on the fuse at desired intervals.

Austin Black Cap also contains a cap well for electric blasting cap where bottom detonation of a column of explosives is desired. For users wanting to place a primer inside a pre-packaged blasting agent, Red Cap is offered optionally with a 1 ft. length of detonating fuse. The latter, which extends from the top of the primer charge, can be tied or hooked to the down line of detonating fuse in the hole.

For additional information, write Austin Powder Company, Cleveland 13, Ohio.



Night . . . or day! At any hour, Highway crews are on the job to keep your equipment running efficiently.

For over 10 years, Highway's regular service hours have been 8 a.m. to 3 a.m. But, in emergencies, Highway works 'round the clock. 87 factory-trained mechanics . . . 32 service truck crews are always available to help you quickly, efficiently, economically.

A-2509A



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Allis-Chalmers HD-21 operated by Robert Bailey, Morrisdale.

"Double Service" keeps Robert Bailey "sold" on **ALLIS-CHALMERS** equipment



Allis-Chalmers TL-20D, the "extra reach" loader, gives Robert Bailey extra production on excavating and loading work.

Economy . . . speed of operation . . . long, trouble-free service life. These add up to only one of the reasons why Robert Bailey, Morrisdale, prefers A-C equipment.

The other is excellent, 'round - the - clock parts, repair and maintenance service by Highway's Du Bois plant.

"Highway service is the best you can get," says Joe Dzwonkowski, operator of the HD-21 shown above. And, he adds: — "The big, new HD-21 has power to spare. It uses only about 60% as much fuel as other models. It's never necessary to grease rollers — we got 10,000 hours on rollers of one HD-21 that worked in sand rock and water while putting in an access road through a creek bed."

A-2942A



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SERVICE... Regular hours — 8 a.m. to 3 a.m. daily. Open 24 hours for emergency work . . . 87 factory-trained mechanics . . . 32 traveling service trucks . . . 23,800 different parts in stock.



AUSTIN Detonating Fuse

promotes blasting efficiency

Filled with a high explosive core, Austin Detonating Fuse possesses sufficient strength and speed to initiate an entire column of explosives . . . connects all holes with an effective detonating agent.

Austin Detonating Fuse is easy to handle, too. It's light in weight and flexible with a tough, waterproof coating that won't crack, chip or peel when being laid.

3 types—There's a type of Austin Detonating Fuse for virtually any purpose. Type 60 is standard. Type 100 is more powerful and for less sensitive explosives and blasting agents. Type 175 is for use with uncoated ammonium nitrates.

All 3 types are insensitive to shock, abrasion and strong electrical currents.

AA-9674



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POWDER COMPANY
CLEVELAND 13, OHIO

explosives ♦ ammonium nitrates ♦ primers ♦ detonating fuse
permissibles ♦ blasting supplies ♦ AP drill heads and bits ♦ mine tools

● The coal industry can boost production substantially if unfair practices of its competitors are removed, Walter F. Schulten, vice president, Consolidation Coal Co., said tonight.

He called for cutbacks in residual oil imports and prohibition of dump sales of natural gas to industrial consumers. Mr. Schulten told the annual Pennsylvania Coal Festival banquet that these unfair competitive practices not only prevent "thousands of miners and railroaders from earning a respectable living," but also "take away dollars from every industry that sells to miners and from all businesses — including clothing stores, gasoline stations, and barber shops — that deal with miners."

Mr. Schulten said that "natural economics phenomena" centering around cost and availability advantages of coal as compared with other fuels — will eventually "carry coal communities into a sustained era of flourishing business activity and prosperity." He added, however, that to advance coal's position immediately requires concerted action on the part of coal management and labor, allied industries, and residents of areas in any way dependent upon a progressive coal industry "for better times."

Referring to Green County industrial development plans, Mr. Schulten said that if plant management and design engineers "closely examine" fuel price and supply factors, coal will be selected for a growing number of new construction projects.

Mr. Schulten said that, just as it is axiomatic that Pennsylvania's industrial power was built on coal, the coal industry will continue to supply a predominant proportion of the energy — either direct or through generation of electrical power — to meet the nation's population upswing and rising living standard.

● The 86th Congress in its waning hours approved a supplemental appropriations bill providing \$1 million to establish an Office of Coal Research in the Department of In-

(Continued on Page 24)

Do you want **MORE** blast hole at **LOWER** cost?

Find out what the owners of REICHdrills are doing—some are getting more hole with one REICHdrill than with two other rotaries, because—

The operator is faster—right up to quitting time. The easiest operated machine on the market—a real one-man drill. Minimum levers, and hydraulic power does the hard work.

Add a drill stem in seconds instead of minutes—the REICHdrill's far faster stem-loading saves time and money on every hole.

Driller can instantly hit exactly right rotation speed for each stratum, from hardest to softest. The only hydraulic rotary that has infinitely variable drill rotation speed.

Lower bit cost—by far. When the bit bites rock, instantly the operator cuts the speed. Average bit life in some cases is $2\frac{1}{2}$ times that of other rotaries.

Extra strength you can SEE. Perfected by unequalled experience in building top drive hydraulic rotaries, the REICHdrill has extra strength wherever needed—compare the pumps, motors, gears, frames, all vital parts. You save many dollars of upkeep expense, and valuable drilling time.

Find out the extra profit you'll make with the REICHdrill. Records made by these rigs are not secrets—inquire of owners nearest you. We'll tell you where they are. Write, wire or phone—

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"80% more hole drilled by REICHdrill in shale and medium sandstone, than by another hydraulic powered rotary of same rated capacity."

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"Very hard rock, REICHdrill with 6 $\frac{1}{2}$ -inch down-the-hole tool drilled 28 ft. in 31 min. Other rig with 6-inch tool, 29 $\frac{1}{2}$ ft. in 60 min."

Full details of these cases—and many more—sent on request. You'll find that in sandstone and shale, REICHdrill outfits have drilled

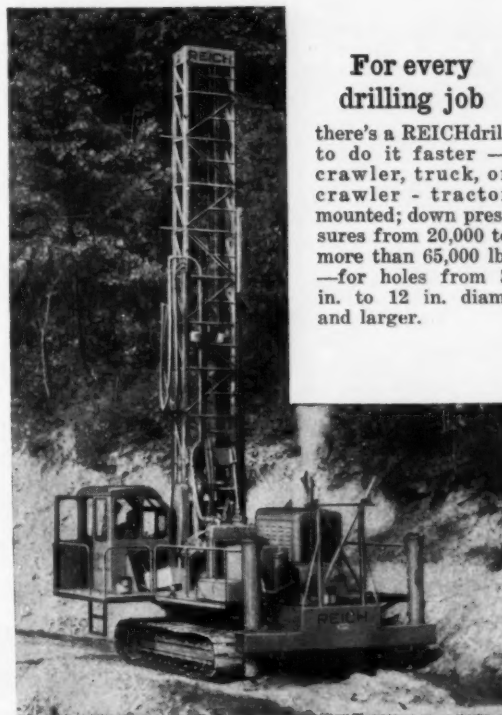
250 ft. per hour

In softer formations, more than

300 ft. per hour

For every drilling job

there's a REICHdrill to do it faster — crawler, truck, or crawler - tractor mounted; down pressures from 20,000 to more than 65,000 lb. —for holes from 3 in. to 12 in. diam. and larger.



Find out what a **REICHdrill** will do on your work

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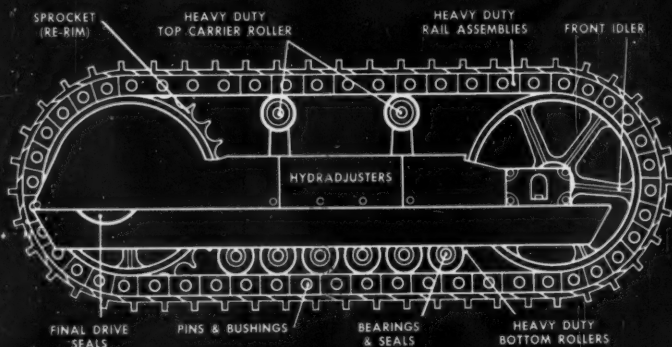
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(Continued from Page 22)
terior. The legislation contains a provision limiting administration and supervision expenses to \$200,000 of the initial \$1 million appropriation. Interior Department officials have said they expect to move promptly in establishing the new research office.

● One of the oldest names in mining equipment design was changed here during the 1960 Labor Day weekend. The Connellsville Manufacturing and Mine Supply Company became Connellsville Corporation, according to Russell L. Lepley, executive vice president and general manager of the company.

Adoption of the new name, according to Lepley, concludes a two-year study conducted by a committee composed of company management and sales engineers, the company's advertising firm, and several mine owners and managers. From a large number of names proposed, two "finalists" were finally put to a vote of the company Board of Directors.

Since the company's equipment is known throughout the mining industry in U. S. A. and overseas as "Connellsville" equipment, Lepley pointed out, the name change does not require major reorientation of the Company's entire marketing program.

According to the company officials, the name Connellsville Corporation will appear in company magazine advertisements beginning with September issues. It will be used thereafter in all trade shows, and will appear in its new form in mining equipment directories and buyers' guides, and on company drawings and technical publications.

The company was founded in 1901 to exploit the ideas of the late Daniel F. Lepley for a self-bottoming mine skip. It has grown to become the world's leading producer of coal mine skips and is one of the leaders in the design and manufacture of mine hoists, mine elevators, car cages, portal mine cages, rotary dumpers, automatic skip loaders, trip feeders, reversible spraggers, and car hauls.

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4500 'VICON'

*... Puts the Push
on Plus Profits!*

The all NEW Manitowoc 4500 VICON shovel with 8 yard capacity is upping production on every job assignment! 25% more output from "integrated" controls ... the VICON system of power application, featuring TWO ENGINES ... and new "interdock" drum arrangement for fast, easy delivery are a few of the many all NEW features that make VICON your best buy for plus-profits.



Typical coal stripping conditions are tackled with ease when Manitowoc "VICON" handles the job!

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 extra 10, 12, 13 and 14 yd. buckets.
 9-W Bucyrus Erie Elec. Drag, 165', 10 yd.
 9-W Bucyrus Erie Diesel Drag, 165', 12 yd.
 7-W Bucyrus Erie Diesel Drag, 140', 7 yd.
 7400 Marion Diesel Drag, 175', 13 yd.
 71-B B.E. Crane with 160' boom
 625 Page Diesel Drag, 150', 10 yd.
 1855 P & H Diesel Drag, 130', 10 yd.
 621-S Page Diesel Drag, 125', 7 yd.
 200-W Bucyrus-Erie Diesel Drag, 125', 6 yd.
 2400 Lima Elec. Drag, 130', 6 yd.
 2400 Lima Diesel Drag, 130', 6 yd.
 4500 Manitowoc Drag, 120', 5 yd.
 120-B Bucyrus-Erie Elec. Drag, 115', 5 yd.
 111-M Marion Drag, 100', 4 yd.
 1055 P & H Diesel Drag, 80', 4 yd.
 1601 Lima, 4 yd., Shovel/Drag
 3900, 3500 & 3000 Manitowoc Cranes
 5550 Marion 26 yd. Elec. Shovel
 190-B B.E. 8 yd. Elec. Shovel
 151-M Marion 7 yd. Elec. Shovel
 1600 P & H 6 Yd. Elec. Shovels
 170-B B.E. 6 yd. Elec. Shovel
 4161 Marion 6 yd. Elec. Shovel
 2400 Lima 6 yd. Std. & H. L. Shovels
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 3500 Manitowoc Standard & H. L. Shovels
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 Northwest 95 Dragline with Murphy Diesel
 Model-21, Electric Starting, 3 1/2 yard Hendrix
 Bucket, Alloy Steel Treads 17' 5" long, 13' 8"
 wide, worm gear boom hoist, folding gantry,
 60' basic boom.

F. O. B. Job ----- \$40,000.00

Rig is two years old in perfect condition.

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 ALLIS-CHALMERS—Model HD16 Bulldozer
 (1956) with Gar Wood Double Drum Power
 Control Unit and Cable Blade. Good condition
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 MANITOWOC—Model 3500 Stripping Shovel,
 Cat. 17000 Diesel, 45' boom, 34' stick, 2 yd.
 dipper. Priced low for quick sale.

 BUCYRUS-ERIE—Model 54B Stripping Shovel,
 Murphy Diesel, 44' boom, 33' stick, 2 yd.
 dipper. Reasonable.

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 Modern Mine Mechanization Systems
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 • Used LeRol 365 CFM portable diesel driven
 Air Compressor—4 pneumatic tires, powered by
 model UD-18-A International engine. \$6,000.
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 equipped with Caterpillar D-326 Diesel, Mag-
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 front end loader, powered by GM 471 Diesel,
 4 wheel drive Allison torque converter and 4-20;
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Made to Withstand High Drilling Speed Whip And Torsional Strain Of Electric Drills.



Drills holes faster — Will not snap off shank or chip points — Outlasts four or five ordinary augers.

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The promises we make are not based on politics—you can believe every word: We'll Buy any quantity of Mining Equipment or complete Mines including Railroads at any time you want to sell and at fair prices always. We'll Sell anything for the efficient mining of coal from one part to an entire mine, including tipples, and guarantee to save you money.

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- 5-Joy 12BU Loaders, 220/440 V. AC.
- 1-Joy 20BU Loader, latest type.
- 4-Joy 11BU Loaders, latest type.
- 1-Joy 8BU Loader, 34" overall height.
- 2-Joy 8BU Loaders, 220 volt AC.
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- 2-Goodman 660 Loaders on Crawlers 440 volt AC, like new.
- 1-Goodman 660 Loader on Crawlers, excellent 250 V. DC.
- 1-Goodman 665 Loader on Crawlers, latest type 250 V. DC.
- 1-Goodman 865 Loader 26" hi. Rebuilt. 250 V. DC.
- 4-Joy 8SC Shuttle Cars, Rebuilt.
- 4-Joy 8SC Shuttle Cars, rebuilt, latest type.
- 1-Joy 8SC Shuttle Car, Excellent.
- 2-Joy 32E9 Shuttle Cars.
- 2-Joy 32E10 Shuttle Cars, rebuilt.
- 2-Joy 32E15 Shuttle Cars, rebuilt.
- 4-Joy 32E16 Shuttle Cars, rebuilt.
- 10-Joy 42E16 Shuttle Cars, rebuilt.
- 2-Joy CD-22 Drills, on rubber, like new.
- 6-Joy T-2 low pan Crawler Trucks, rebuilt.
- 1-Joy T-2-6 low pan Crawler Truck with reel.
- 2-Joy T-1 Standard Crawler Trucks, 220 AC.
- 1-Joy T-1 Standard Crawler Truck, 250 DC.
- 2-Goodman low pan Crawler Trucks, like new latest type.
- 4-Joy 11-B Cutting Machines, like new, 35 and 50 H.P.
- 1-Joy 7-B Cutting Machine, like new, 250 volt DC.
- 2-Goodman 212 Cutting Machines, 19" high.
- 1-Goodman 312 Cutting Machines, 17" high.
- 3-Goodman 412 Cutting Machines, 19" high.
- 1-Goodman Machine on Crawler, 31" high. All hydraulic.
- 6-Goodman 512 Machines with bugdusters.
- 6-Goodman 612 Cutting Machines, 250 and 500 volt.
- 1-Lee Norse low vein Machine Carrier on rubber.
- 1-Jeffrey 70 URB rubber tired Cutter. Universal head, perfect condition.
- 1-Goodman 2410 rubber tired Cutter, Universal Head, like new.
- 3-Joy 11RU Rubber Tired Cutters with bugdusters, Universal heads, dual tires, like new, 250 V. DC.
- 2-Joy 10RU rubber tired cutters Universal head, 220/440 volt AC, perfect.
- 4-Joy 10RU rubber tired Cutters, Universal Head, 250 V. DC.
- 6-7AU's on track, Universal head.
- 2-Jeffrey 29UC Cutting Machines, Universal head, cuts anywhere in seam, 38" high, on Crawlers, 250 volt DC.
- 1-Jeffrey 29LC on Crawlers, rebuilt.

LOCOMOTIVES

- 1-Goodman 6 ton, 93-A, 27" high, armor plate frame.
- 1-Jeffrey 15 ton MH-77 Locomotive, Armor Plate frame.
- 3-Jeffrey, 13 ton, type MH-110, 36", 42", 44" ga.
- 2-Jeffrey, 10 ton, type MH-110, 42" and 44" Ga.
- 2-Jeffrey 10 ton, type MH-78, 42" & 44" Ga.
- 2-Goodman 8-30 and 10-30 Locomotives, 26" above rail.
- 1-Jeffrey MH-121, 4 ton, like new, with reel, 24" overall height.
- 2-Jeffrey, MH-150, 6 ton, 26" overall height, rebuilt with reel.
- 12-Jeffrey, 6 ton, type MH-88, 42", 44" and 48" Ga.
- 4-Jeffrey, 8 ton, type MH-100, 2½" armor plate frames.
- 1-Jeffrey, 6 ton, type 2186, 22" above rail.
- 3-Jeffrey, 4 ton, type MH-96, 42", 44" and 48" Ga.
- 1-G. E., 4 ton, type 825 Locomotive, 22" high.
- 10-G.E., 6 ton, types 801, 803, 821 Locomotives, 42", 44" and 48" Ga.
- 1-G.E. 8 ton, type 822 Locomotive, 44" Ga.
- 3-G.E. 10 ton, type 809 Locomotives, 42", 44", 48" Ga.
- 2-G. E. 13 ton type 829 Locomotives, armor plate frames.
- 1-Goodman 91A Locomotive, 8 ton, 26" overall height.
- 2-Goodman, type 33, 6 ton, 44" and 48" Ga.
- 3-Westinghouse, type 902, 4 ton, 42" and 48" Ga.
- 2-Atlas Battery Locomotives, 36" Ga.
- 1-Atlas Trolley Locomotive, 4 ton, 24" high.

- 1-Ironton Battery Locomotive, 4 ton, 24" high, excellent, with charger.
- 2-Westinghouse, type 904, 6 ton, 44" and 48" ga.
- 2-Westinghouse, type 904, 44" and 48" Ga.
- 2-Westinghouse, type 907, 10 ton, 44" and 48" Ga.
- 8-Jeffrey MH-78 Locomotive Units, cheap.
- 4-Jeffrey MH-88 Locomotive Units, real bargains.
- 6-Jeffrey MH-100 Locomotive Units, reasonable.
- 3-Plymouth Diesel Locomotives, 8 and 10 tons, 42" and 44" Ga.

Locomotive Trucks and Spare Armatures for all the above.

TIPPLE EQUIPMENT

- 1-All steel 5 track Tipple, new 1957, complete with washer, silo, oil treating system, all bolted construction.
- 1-Complete Five Track Tipple with Washers and Air Tables.
- 1-Complete stoker plant, all steel.
- 2-Complete Tipples, 3 and 5 track, steel and wood.
- 3-Cleaning Plants, 1 Ea. McNally, Roberts and Schaefer, Jeffrey, Washers and Airflow Tables.
- 4-Complete Aerial Trams for coal or refuse.
- 3-Complete Rope and Button Lines.
- 2-Monitor Lines complete with Drums, excellent.
- 1-Allis-Chalmers 5' x 12' Rippflo Vibrator.
- 1-Allis-Chalmers 4' x 12' Low-Head Vibrator.
- 1-Robins Gyrex Vibrator 4x10.
- 10-Belt and Apron type Loading Booms.
- 6-Shaker Screens.
- 1-Robins Car Shakeout.
- 20-Crushers, various sizes—Jeffrey McLanahan & McNally.
- 4-Mine Scales, 10 & 20 tons.
- 5-Track Scales, 25 to 40 tons, late type.

Feeders, Belt and Drag Conveyors, Car Retarders,

CUTTING MACHINES

- 2-Joy 10RU rubber tired cutters, Universal head, 220/440 volt AC. Perfect.
- 4-Joy 10RU rubber tired Cutters, Universal Head, 250 V. DC.
- 3-Joy 11RU rubber tired Cutters, 250 V. DC.
- 1-Goodman 2410 rubber tired Cutter Universal Head, new, 1956, Excellent.
- 2-Jeffrey 29UC Universal Machines on Crawlers.
- 1-Goodman on Crawlers, 31" overall height.
- 3-Baby Goodman 212's, rebuilt, 250 Volt DC.
- 7-Goodman 212 Cutting Machines, 19" high.
- 4-Goodman 312 Cutting Machines, 17" high.
- 3-Goodman 412 Cutting Machines, 19" high.
- 4-Goodman 512's with Bugdusters, like new.
- 4-Goodman 512's, rebuilt, or as removed from service.
- 6-Goodman 612's—250 & 500 V.
- 3-Goodman 112's 220/440 volt AC.
- 1-Joy 7-B Cutting Machine, 250 volt DC.
- 4-Joy 11B Cutting Machines, rebuilt. 35 and 50 H. P.
- 6-7 AU's, on track, Universal head.
- 10-Goodman 12AA's and 112AA's, 250 volt DC.
- 2-Goodman 724 Slabbers.
- 2-Goodman 724 Slabbers.
- 2-Goodman, 824 Slabbers.
- 6-Jeffrey 35L's, like new, 17" high.
- 2-Jeffrey 35L's on low vein trucks.
- 2-Jeffrey 35L's, 220/440 AC.
- 3-Jeffrey 35BB, 220/440 AC.
- 15-Jeffrey 35B's and 35BB's, 250 V. DC.
- 2-Jeffrey 29B's on track.
- 10-Jeffrey 29C's, track mounted.
- 2-Jeffrey 29L's on Crawlers, Excellent.
- 1-Sullivan CET, 220/440 V. AC.

CONVEYORS

- 1-Robins 36" tandem drive, with or without structure.
- 2-Jeffrey 52-B tandem drive 36" Belt Conveyor 1,500'.
- 1-Jeffrey 52-B tandem drive, 26" Belt Conveyor.
- 1-Joy 30" Underground Belt Conveyor, Excellent.
- 1-Goodman 97-C, 30" tandem drive.
- 1-Goodman 97-C, 26" Conveyor, 1,000' long.
- 1200' Robins 36" Underground Structure like new.
- 1,000'-Conveyor Belt 42".
- 4,000' Conveyor Belt 36".
- 4,000' Conveyor Belt 26".
- 8-Jeffrey 61AM 12" Chain Conveyors, 300'.
- 2-61EW Elevating Conveyors.
- 2-61WH 15" Room Conveyors, 300'.
- 2-Joy 13" Room Conveyors, 300'.
- 2-Joy 20" Conveyors, 300'.
- 4-Joy Ladel UN-17 Shakers.
- 10-Goodman G-12½ and G-15 Shakers.
- 1,000' Goodman 18" Flat Belt Conveyors, tandem drive, any length, Perfect.

CONVERTERS AND DIESEL PLANTS

- 1-300KW Portable Rectifier, 3 car unit, excellent.
- 2-500KW G.E. Stationary Rectifiers.
- 4-1,000KW Stationary Rectifiers.
- 2-100KW, G. E. TCC-6's, 275 volt, Rotary Converters.
- 1-150KW, G.E. HCC-6, 275 V., Rotary Converter.
- 1-150KW, 6 phase, Allis-Chalmers Rotary

- Converter, 275 V. DC.
- 2-200KW G.E. HCC-6's, Rotary Converters, 275 V. DC. Steel Frames, Newly rewound.
- 3-300KW, G. E. HCC-6's Rotary Converters, 275 V. DC, like new
- 2-300KW Westinghouse, 6 phase, Rotary Converters, 275 volt DC.
- 2-300KW Westinghouse Rotary Converters, 275 volt DC.
- 2-200KW Westinghouse Rotary Converters, 275 V. DC. Newly rewound.
- (all the above with 6900/13000 and/or 2300/4000 primary transformers)
- 2-100 KW MG Sets, 275 volt DC.
- 2-150KW MG Sets, General Electric and Westinghouse, 275 V. DC.
- 1-200KW MG Set, Westinghouse, rebuilt, 275 V. DC.
- 1-200KW MG Set, General Electric, perfect. 275 volt DC.
- 2-300KW G. E. MG Sets, like new.
- 1-300 KW Westinghouse, 600 volt MG Set, rebuilt.
- 2-300KW Westinghouse, 600 volt, 6 phase, Rotary Converters.
- 2-300KW Westinghouse, 600 volt, DC, 6 phase, Rotary Converters.
- 2-300KW HCC-6's Rotary Converters, 6 phase, 600 volt DC.
- 1-GMC 471 Diesel with 60 KW, 250 volt DC Generator.
- 2-GMC-671 Diesels with 75 KW, 250 volt DC Generators.
- 1-Cummins 125 KW, Diesel with 250 volt DC Generator.
- 1-Allis Chalmers Natural Gas Engine with 100 KW Generator, 275 volt DC.
- Boilers, like new, 500 H.P.

LOADING MACHINES

- 16-Joy Loaders, 14BU, 12BU, 8BU, 11BU, 12BU.
- 5-Joy 12BU9E Loaders, 220/440 volt AC. Excellent.
- 3-Joy 12BU9E Loaders, latest type.
- 2-Joy 12BU with Piggyback Conveyors.
- 2-Goodman 865 Loaders, 26" on Crawlers.
- 1-Goodman 865 Loader, on Crawlers, rebuilt.
- 2-Goodman 660 Loaders, 440 volt AC perfect.
- 1-Goodman 660 Loader, on Crawlers, 250 V. DC.
- 1-Goodman 460, on track, Rebuilt, All Hydraulic.
- 2-Jeffrey 61 CLR's, on rubber, 26".
- 2-Jeffrey L-500 Loaders.
- 3-Myers Whaley, No. 3 Automatic Loaders.
- 2-Clarkson Loaders, 26" above rail.

MISCELLANEOUS

- 1-Complete Five Track Tipple with Washers and Air-Tables.
- 5-Complete Tipples, 3 to 5 Track. Wood and Steel.
- Steel Trestles for drop bottom cars.
- All Steel Armco Buildings.
- 20-Jeffrey Movers on rubber tires.
- 1-¾ Yard Shovel and Back-Hoe.
- 1-¾ Yard Crawler Crane.
- Battery Supply Tractors, rubber tired.
- 1-Cantrell Air Compressor on rubber tires.
- 10-Air Compressors, 1 H.P. to 40 H.P.
- 2-Joy self propelled rubber tired compressors, 240 cu. ft.
- 2-Acme self propelled rubber tired compressors, 130 cu. ft.
- 40 Mine Pumps, all types.
- 1-Differential 40 Passenger Man-Trip Car.
- 6-MSA Rock Dusters.
- 2-Phillips, Carriers, 44" and 48" Ga.
- 1-Barber Greene self propelled Bucket Elevator.
- Pipe, Plastic, Steel, Transit, all sizes 1" to 6".
- 300 Mine Cars, drop bottom, 42" Ga.
- 90 Mine Cars, drop bottom, 44" Ga.
- 50 Mine Cars, drop bottom, 48" Ga.
- 100 Mine Cars, 18" high, end dump, 44" Ga.
- 300 Mine Cars, end dump and drop bottom, 18" high, 48" Ga.
- 1-10 ton Mine Car Scale with Recorder.
- 15-Brown Fayro HKL and HG Car Spotters.
- 1-Brown Fayro Hydraulic Car Spotter.
- 1-12 ton Differential Slat Larry.
- Incline Hoists, 25 to 50 H.P.
- 1-Jeffrey 5' Aerodyne Fan, like new.
- 1-Jeffrey 6' Aerodyne Fan.
- 2-Storage Tanks, 4,000 Gallons.
- 2-Storage Tanks, 10,000 Gallons.
- 10,000 Five Gallon G. I. Cans, screw lids.
- 2,500 tons Relaying Rail, 25 lb., 30lb., 40lb., 50lb., 60lb., 70lb.
- 30-tons Copper—4/0 and 9 Section Trolley 1/0, 2/0, 4/0 Stranded.
- Thousands of feet of rubber covered three conductor cable. All sizes.
- 300 Transformers from 1 to 300 KVA, 110 to 13,000 primary volts.
- 400 Electric Motors, 3 to 250 H. P.
- Huge stock of Mine Supplies.
- 500 MSA Mine Lamps, Chargers, etc.
- 4-Mine Scales, 10 & 20 ton.
- 3-Truck Scales, 25 to 40 ton, late type.
- Mack & International tandem dump trucks.
- Thousands of other items.

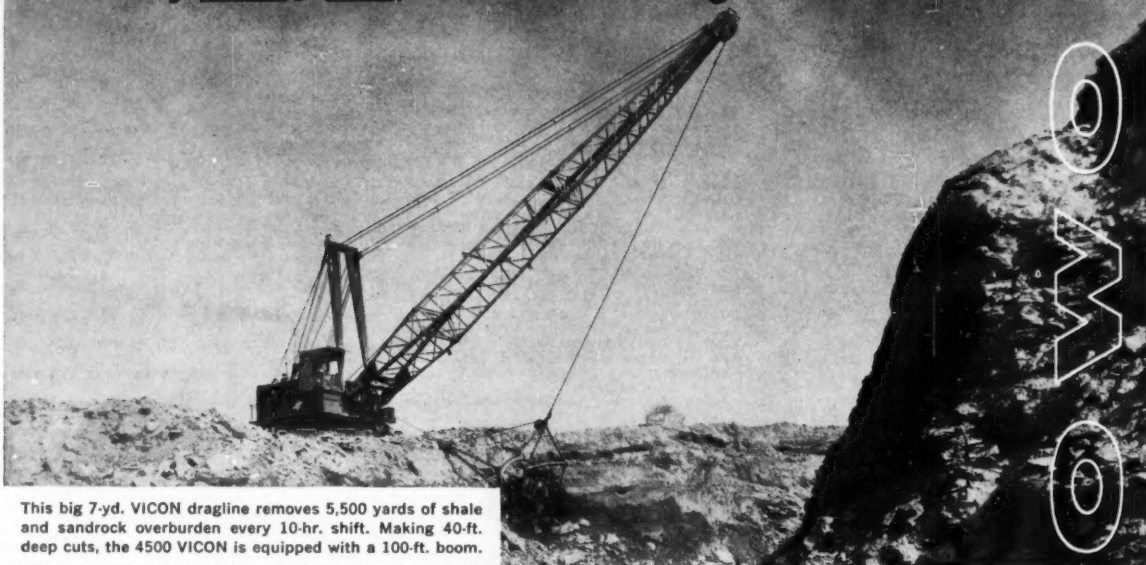
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This big 7-yd. VICON dragline removes 5,500 yards of shale and sandrock overburden every 10-hr. shift. Making 40-ft. deep cuts, the 4500 VICON is equipped with a 100-ft. boom.

The Manitowoc Model 4500 VICON represents the most outstanding advancement of excavator design in decades. Here is a 6 yard shovel or 7 yard dragline incorporating new, tested design principles to give you more yardage in less time than any other mechanical or electrically driven shovel-drag in this size range. Thoroughly proved on the job for over three years, VICON design has increased yardage 25% or better, substantially reduced maintenance costs, and piled up more profits for owners. Some exclusive VICON features are:

INTEGRATED CONTROLS that serve both as clutch operating levers and as engine throttles, providing variable speed control over each function. Clutches, being responsive to lower range of control pressures, are engaged before engines are accelerated. Slippage and overheated friction surfaces are eliminated, lengthening clutch life appreciably.

HOIST AND DRAG DRUMS ARE INTERLOCKED to automatically synchronize their operation. Cycle time is faster and output is greater because full horsepower is always available for hoist—the operator doesn't "soak" it up with the drag brakes. Operating costs are noticeably less because brake use is cut by 50%

and lining wear is drastically reduced. Another advantage of the VICON interlocked drum arrangement is that the operator can "power lower" or free-cast the bucket.

DUAL INDEPENDENT ENGINE POWER with one engine powering the main drums, and the second all other functions. Here are all the advantages of electric or conventional diesel engine mechanical drive without the disadvantages of each. You get the performance characteristics of electric drive — smoother power flow, variable independent speed control, simultaneous operation of dig, hoist, swing, and propel functions—without sacrificing mobility, without incurring the headaches and special maintenance problems of electric drive, without needing a separate power source at every job site. You get the simplicity of mechanical drive without losing valuable production time because of engine "lug down", without needing to jam clutches into engagement at high and harmful engine speeds, without the limitations of operating speeds that are inherent in conventional diesel engine drive.

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8-A1

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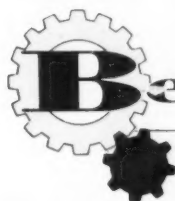
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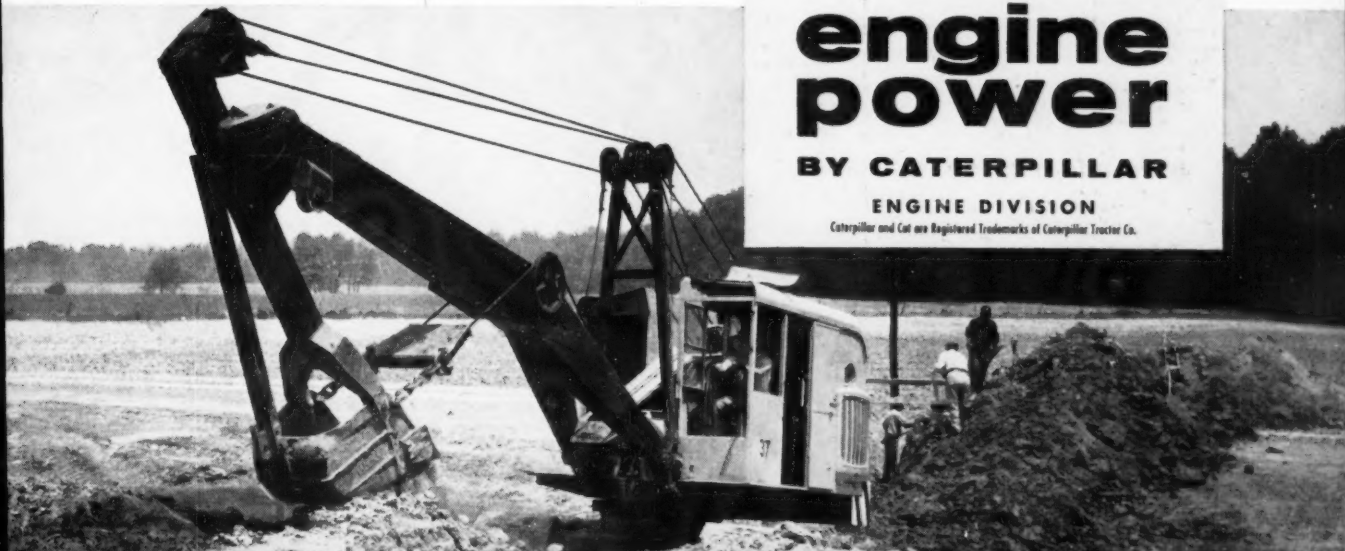
Plenty of lugging power is supplied to this backhoe by a torque converter-equipped D318. Matched-design torque converters are available for all models of Cat Diesel Engines.

engine power

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ENGINE DIVISION

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▲ Allis-Chalmers TL-20 dumps right in center of truck at Benjamin Coal Co., LaJose, Pa.

Extra r-e-a-c-h makes the difference! The **ALLIS-CHALMERS** TL-20 has it!

With the Allis-Chalmers TL-20, you can dump loads right in the center of high-body trucks.

Why? Because, by comparison with other tractor loaders, *the TL-20 has at least an extra foot of reach.*

This saves valuable seconds on work cycles . . . gives you fast, even dumping. It eliminates necessity for time-consuming loading from both sides. No pitching. No time lost in dozing to distribute load evenly. No banging of truck and loader.

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